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REPORT OF STATIC TEST OF SKI FOR AN SE-5 AIRPLANE

(AIRPLANE SECTION, S. & A. BRANCH)



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(2)

REPORT OF STATIC TEST OF SKI FOR AN SE-5 AIRPLANE.

OBJECT.

This static test was conducted for the purpose of determining and structural strength of the SE-5 ski.

DATE AND PLACE.

This ski was tested at McCook Field, Dayton, Ohio, February 11, 1921.

WITNESSES.

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SUMMARY.

The ski failed with a load of 12,500 pounds, which is 12 times the load upon it while the airplane is at rest.

The results are satisfactory.

GENERAL DESCRIPTION.

The ski is entirely of wood construction. The top is made of three-ply veneer, mahogany sides and poplar center, and the sides are three-ply veneer with birch outside and poplar center. The runner is of three-ply ash veneer; the over-all thickness is $\frac{3}{4}$ inch.

The lower longerons are $\frac{3}{4}$ by $\frac{3}{4}$ ash and the upper ones are $\frac{3}{4}$ by $\frac{3}{4}$ spruce.

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The ski is attached to the axle by means of a bracket and bearing combined which slides on the axle the same is the wheel.

Figure 1 shows a cross-sectional view of the ski. The weight of the ski ready for use is $21\frac{1}{2}$ pounds.

PROCEDURE.

The ski was placed in an inverted position by a steel shaft passing through the bearing and supported on each side of it. A jack was placed at each end to prevent rotation during loading.

The load was applied in increments ranging from 2,000 pounds at the start of static test to 500 pounds at the end.

It was placed so that the ski was balanced on the steel shaft.

RESULTS.

Failure occurred with a load of 12,500 pounds. Figure 2 shows the resulting failure.

Before failure it supported six times the total weight of an SE-5 airplane, or 12 times the load upon it when the airplane is at rest.

The results obtained are satisfactory. The ski is strong enough to be in service for a while under various weather conditions and still function satisfactorily.

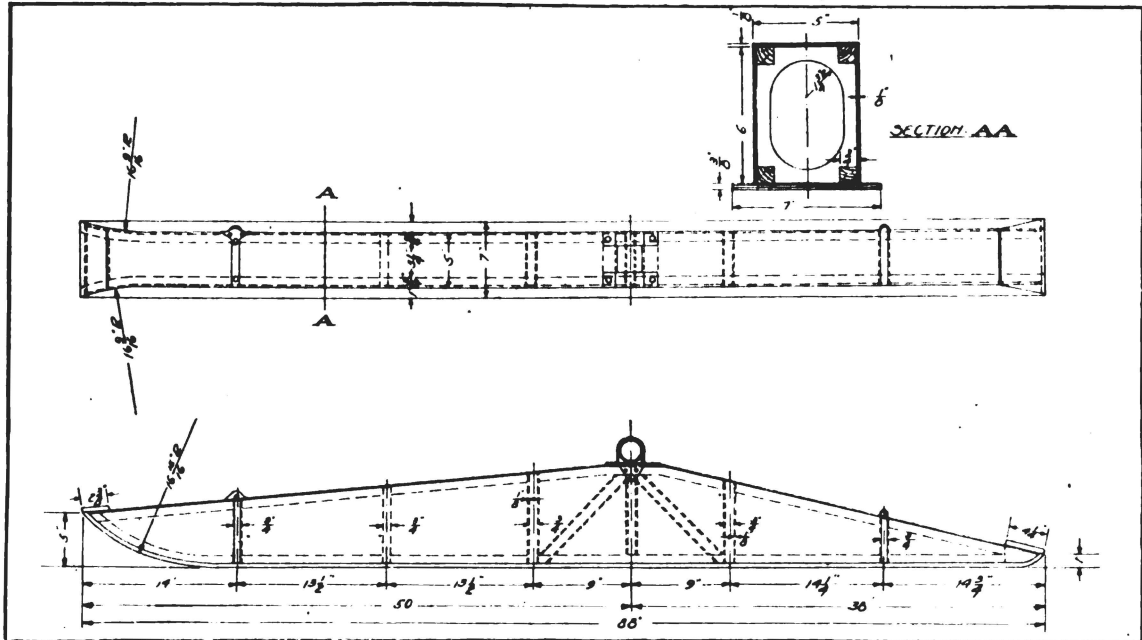


FIG. 1.—Landing ski for an SE-5 airplane.



FIG. 2.